UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,151	04/01/2004	Pascal Scaramuzzino	AD7015USNA	9032

23906 7590 07/07/2005

E I DU PONT DE NEMOURS AND COMPANY
LEGAL PATENT RECORDS CENTER
BARLEY MILL PLAZA 25/1128
4417 LANCASTER PIKE
WILMINGTON, DE 19805

EXAMINER	
RONESI, VICKEY M	

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/816,151	SCARAMUZZINO, PASCAL	
	Examiner	Art Unit	
	Vickey Ronesi	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) 12-18 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-11 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) 1-18 are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7/16/04, 11/19/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-11, drawn to a polyacetal mixture, classified in class 524, subclass 425.

II. Claims 12 and 13, drawn to an acid-etched polyacetal article, classified in class 428, subclass 457+.

III. Claims 14-17, drawn to a method of electroplating a polyacetal article, classified in class 427, subclass 299+.

IV. Claim 18, drawn to a method of preparing a polyacetal mixture, classified in class 524, subclass 400.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as molding composition and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product could be used in a materially different process. For example, the polyacetal mixture could be laminated to a polymeric film.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. Inventions I and IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product could be made by a materially different process. For example, the product could be made by mixing all the components as a single composition.

7. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

8. Inventions II and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product could be made by a materially different process. For example, the product could be made by a process wherein the metal plate does not have a galvanoplate applied thereto.

9. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

10. Inventions II and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions the inventions have different modes of operation.

11. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

12. Inventions III and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the mixtures could be made by blending all the components in a single mixture.

The subcombination has separate utility such as a method of making a polyacetal freestanding film having the claimed composition.

13. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

14. During a telephone conversation with Tamera Fair on Thursday May 25, 2005 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-11. Affirmation of this election must be made by applicant in replying to this Office action. Claims 12-18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

12. Claims 8-10 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claims. See MPEP § 608.01(n). In the interest of compact prosecution, the claims have been examined as if they were dependent on the broadest and most relevant claims (claims 8 and 9 as dependent on claim 6; claim 10 as dependent on claim 1).

Claim is 11 objected to because of a typographical error: the error "that" on line 2 of the claim should read as "than".

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, there is no basis for the molecular weight of the non-polyacetal resin, and there is no support in the specification as originally filed. In amending claims, no new matter should be introduced. It has been noted that on page 8, line 4 of the present specification, the term "number average molecular weight" is given but that is only with respect to the molecular weight of the polyacetal resin.

With respect to claims 8 and 9, the term "the acid-insoluble particles" lack antecedent basis when the claims are dependent on any one of claims 1-5.

With respect to claims 2-7, 10, and 11, they are rejected for being dependent on a rejected claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 1-5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al (US 4,464,435) in view of Flexman (US 5,318,813).

Hattori et al discloses a polyacetal resin composition comprising 100 parts by weight (pbw) of a polyacetal resin; 2-35 pbw of a Group II metal salt (i.e., acid-soluble particles) having a particle size ranging from 0.1-4.0 microns such as calcium carbonate (col. 2, line 66 to col. 3, line 38); 0.01-20 pbw of an additional polymer (col. 3, lines 57-68; col. 5, lines 15-24)—which converts to about 2 to about 35 wt % of Group II metal salt based on the amount of polymer and up to about 16 wt % of additional polymer based on the amount of polymer. Given that Hattori et al's composition is melt-processed and injection molded into an article (col. 5, lines 37-51; col. 8, line 60) like presently disclosed on page 15, lines 22-31 and page 16, lines 7-10 of the present specification, it is intrinsic that said article also contains acid-soluble particle at its surface.

With respect to the percentage of acid-soluble particles within the presently claimed range, given the teachings by Hattori et al regarding particle size regarding the disadvantages of having particle diameter outside its prescribed range, it would have been obvious to one of ordinary skill in the art to have at least 98 % of the particles be within the range taught by Hattori et al

Hattori et al is silent with respect to the molecular weight of its non-acetal, additional polymer.

Flexman discloses blends of polyoxymethylene with amorphous thermoplastic polymers (col. 10, lines 56 to col. 11, line 22) which are injection molded and teaches that the molecular weight of the added amorphous thermoplastic polymer preferably ranges from one derived from at least 20 repeat units up to a maximum molecular weight that is readily discernible by those skilled in the art (col. 10, lines 24-40). As exemplified, SAN copolymers have a molecular

weight preferably at least 10,000 (col. 11, line 28) and a polyamide has a molecular weight of 17,000 (col. 10, line 12).

Given that Flexman, like Hattori et al, discloses that the molecular weight of an additional polymer is readily discernible by one of ordinary skill in the art and that its explicitly described molecular weights falls within the range presently claimed, it would have been obvious to one of ordinary skill in the art to utilize additional polymer in the polyacetal composition of Hattori et al with suitable molecular weights (including those within the scope of the present claims) for use in injection molding and thereby arrive at the presently cited claims.

15. Claims 6-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al (US 4,464,435) in view of Flexman (US 5,318,813) and further in view of Gelorme et al (US 4,615,763).

The discussion with respect to Hattori et al and Flexman in paragraph 14 above is incorporated here by reference.

Hattori et al does not disclose the use of acid-insoluble inorganic particles, however, its open to the addition of various additives (col. 5, lines 32-36).

Gelorme et al, like Hattori, discloses a way of roughening surface of a substrate in preparation for etching. In Gelrome et al's method, 1-10 wt % of inorganic particulate such as fused silica (e.g., Cabosil) which have a particle size of from about 0.002 to about 10 microns is added to a resinous material (col. 3, lines 54-65; col. 4, lines 21-29) and then, upon etching, the resinous material is removed while the inorganic particulate remains and is left exposed (col. 3, lines 12-22).

Given that Hattori et al and Gelorme et al both disclose methods of roughening surfaces, it would have been obvious to one of ordinary skill in the art to combine the features of both (i.e., the acid-soluble particles of Hattori et al and the acid-insoluble particles of Gelorme et al) that accomplish the same end and thereby arrive at the presently claimed invention. Case law holds that "it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven,* 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

By combining Hattori et al and Gelorme et al and based on the amounts taught by each, the acid-insoluble particles of Gelorme et al are present in an amount from 5/1 to 1/35 the weight of the acid-soluble particles of Hattori et al.

In light of the above, it would have been obvious to one of ordinary skill in the art to combine the compositions of Hattori et and Gelorme et al where the particle diameters and relative amounts are as taught by both references which would intrinsically give an article with the acid-insoluble particles anchoring around the surface of the acid-insoluble particles since they are processed in the same manner as presently disclosed (page 15, lines 22-31) and thereby arrive at the presently cited claims.

16. Claims 1, 2, 4, 5, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumura et al (US 6,211,268) in view of Hattori et al (US 4,464,435).

Matsumura et al discloses a polyoxymethylene resin composition comprising 100 parts by weight (pbw) of a polyoxymethylene copolymer; 0.01-5 pbw of a non-acetal polymer having a an average molecular weight of from 10,000 or more (col. 5, lines 1-43); and 0.001 to 5 pbw of at least one metal compound that improve thermal stability such as calcium carbonate (col. 6, line 61 to col. 7, line 19). Given that Matsumura et al's composition is melt-processed and injection molded into an article (col. 7, lines 32-58; col. 8, lines 19-20) like presently disclosed on page 15, line 22-31 and page 16, lines 7-10 of the present specification, it is intrinsic that said article also contains acid-soluble particle at its surface.

Matsumura et al does not disclose the size of the metal compound utilized to improve thermal stability.

Hattori et al discloses a polyacetal resin composition having excellent heat stability and comprising metal salts like those described by Matsumura et al above and teaches that for its composition to exhibit the advantageous heat stability, the particle diameter necessarily ranges from 0.1 to 4.0 microns (col. 3, lines 13-25).

Given that the metal compounds described by Matsumura et al are like the ones taught by Hattori et al, it would have been obvious to one of ordinary skill in the art to utilize metal compounds wherein at least 98% of the particle diameter from 0.1 to 5 microns as taught by Hattori et al in Matsumura et al and thereby arrive at the presently cited claims.

Contact Information

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

6/29/2005
VT

Callie Shosho
CALLIE SHOSHO
PATENT EXAMINER